

IN THE CLAIMS

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An unascertained water occurrence distribution estimating device ~~characterized by comprising:~~

unascertained water occurrence distribution estimating means for outputting an unascertained water occurrence distribution in each district, in which an occurrence distribution of unascertained water flowing into a sewer is to be estimated, on the basis of a comparison result between unascertained water occurrence function information in ~~said each~~ said district and unascertained water amount function information at a base point located downstream of ~~said each~~ said district,

said unascertained water occurrence distribution estimating means including:

first processing means for performing a pattern matching analysis between unascertained water occurrence function information in ~~said each~~ said district, which is generated from unascertained water occurrence factor information in a district of interest which includes an amount of rainfall in the district of interest, and the unascertained water amount function information including an amount of unascertained water at the base point, and;

second processing means for outputting a pattern matching degree for ~~said each~~ said district which is obtained by the pattern matching analysis as an unascertained water occurrence distribution in ~~said each~~ said district.

2. (Currently Amended) An unascertained water occurrence distribution estimating device according to claim 1, ~~characterized in that wherein~~ the unascertained water occurrence function information includes rainfall amount data representing a time-series change in an amount of rainfall in a district of interest, and the unascertained water occurrence amount function information includes unascertained water amount data representing a time-series change in an amount of unascertained water at the base point.

3. (Currently Amended) An unascertained water occurrence distribution estimating device according to claim 2, ~~characterized in that wherein~~ the pattern matching degree comprises a correlation value between the rainfall amount data and the unascertained water amount data.

4. (Currently Amended) An unascertained water occurrence distribution estimating device according to claim 3, ~~characterized in that wherein~~ said first processing means calculates the correlation value by correcting a difference in time required for unascertained water to reach the base point from the district of interest.

5. (Currently Amended) An unascertained water occurrence distribution estimating device according to claim 3, ~~characterized in that wherein~~ said first processing means calculates

correlation values while sequentially shifting temporal positions of the rainfall amount data and unascertained water amount data, and selects a maximum value of the correlation values as a correlation value in the district of interest.

6. (Currently Amended) An unascertained water occurrence distribution estimating device according to claim 3, ~~characterized by~~ further comprising unascertained water calculating means for calculating the unascertained water amount data from a difference between sewage water amount data representing a time-series change in an amount of sewage water at the base point and non-rainfall sewage water amount data representing a time-series change in an amount of sewage water at the base point ~~in~~ during a non-rainfall weather.

7. (Currently Amended) An unascertained water occurrence distribution estimating device according to claim 1, ~~characterized by~~ further comprising contour information calculating means for calculating ~~a~~ said pattern matching degree around ~~said~~ each said district by performing interpolation computation using ~~a~~ said pattern matching degree in said each district as interpolation information, and outputting contour information representing the unascertained water occurrence distribution by using the obtained interpolation information.

8. (Currently Amended) An unascertained water occurrence distribution estimating method ~~characterized by~~ comprising ~~the~~ an unascertained water occurrence distribution estimating step of outputting an unascertained water occurrence distribution in each of a plurality of district ~~districts~~, in which an occurrence distribution of unascertained water flowing into a

sewer is to be estimated, on the basis of a comparison result between unascertained water occurrence function information in ~~said each~~ said district and unascertained water amount function information at a base point located downstream of ~~said each~~ said district,

the unascertained water occurrence distribution estimating step including ~~the a~~ first step of performing a pattern matching analysis between unascertained water occurrence function information in ~~said each~~ said district, which is generated from unascertained water occurrence factor information in a district of interest which includes an amount of rainfall in the district of interest, and the unascertained water amount function information including an amount of unascertained water at the base point, and ~~the a~~ second step of outputting a pattern matching degree for ~~said each~~ said district which is obtained by the pattern matching analysis as an unascertained water occurrence distribution in ~~said each~~ said district.

9. (Currently Amended) An unascertained water occurrence distribution estimating method according to claim 8, ~~characterized in that wherein~~ the unascertained water occurrence function information includes rainfall amount data representing a time-series change in an amount of rainfall in a district of interest, and the unascertained water occurrence amount function information includes unascertained water amount data representing a time-series change in an amount of unascertained water at the base point.

10. (Currently Amended) An unascertained water occurrence distribution estimating method according to claim 9, ~~characterized in that wherein~~ in the first step, as the pattern

matching degree, a correlation value between the rainfall amount data and the unascertained water amount data is used.

11. (Currently Amended) An unascertained water occurrence distribution estimating method according to claim 10, ~~characterized in that~~ wherein in the first step, the correlation value is calculated by correcting a difference in time required for unascertained water to reach the base point from the district of interest.

12. (Currently Amended) An unascertained water occurrence distribution estimating method according to claim 10, ~~characterized in that~~ wherein in the first step, correlation values are calculated while temporal positions of the rainfall amount data and unascertained water amount data are sequentially shifted, and a maximum value of the correlation values is selected as a correlation value in the district of interest.

13. (Currently Amended) An unascertained water occurrence distribution estimating method according to claim 10, ~~characterized by further comprising the~~ a third step of calculating the unascertained water amount data from a difference between sewage water amount data representing a time-series change in an amount of sewage water at the base point and non-rainfall sewage water amount data representing a time-series change in an amount of sewage water at the base point ~~in~~ during a non-rainfall weather.

14. (Currently Amended) An unascertained water occurrence distribution estimating method according to claim 8, ~~characterized by~~ further comprising ~~the~~ a fourth step of calculating a pattern matching degree around ~~said~~ each said district by performing interpolation computation using a pattern matching degree in ~~said~~ each said district as interpolation information, and outputting contour information representing the unascertained water occurrence distribution by using the obtained interpolation information.

15. (Currently Amended) A recording medium ~~characterized by recording~~ having a program recorded thereto, for causing a computer for an unascertained water occurrence distribution estimating device, which outputs an unascertained water occurrence distribution in ~~each of a plurality of districts~~ district, in which an occurrence distribution of unascertained water flowing into a sewer is to be estimated, on the basis of a comparison result between unascertained water occurrence function information in ~~said~~ each said district and unascertained water amount function information at a base point located downstream of said each district, to execute

~~the~~ a first step of performing a pattern matching analysis between unascertained water occurrence function information in ~~said~~ each said district, which is generated from unascertained water occurrence factor information in a district of interest which includes an amount of rainfall in the district of interest, and the unascertained water amount function information including an amount of unascertained water at the base point, and ~~the~~ a second step of outputting a pattern matching degree for ~~said~~ each said district which is obtained by the pattern matching analysis as an unascertained water occurrence distribution in ~~said~~ each said district.

16. (Currently Amended) A recording medium according to claim 15, ~~characterized in that wherein~~ the program makes the unascertained water occurrence function information include rainfall amount data representing a time-series change in an amount of rainfall in a district of interest, and makes the unascertained water occurrence amount function information include unascertained water amount data representing a time-series change in an amount of unascertained water at the base point.

17. (Currently Amended) A recording medium according to claim 16, ~~characterized in that wherein~~ the program uses a correlation value between the rainfall amount data and the unascertained water amount data as the pattern matching degree in the first step.

18. (Currently Amended) A recording medium according to claim 17, ~~characterized in that wherein~~ the program calculates the correlation value by correcting a difference in time required for unascertained water to reach the base point from the district of interest in the first step.

19. (Currently Amended) A recording medium according to claim 17, ~~characterized in that wherein~~ the program calculates correlation values while sequentially shifting temporal positions of the rainfall amount data and unascertained water amount data, and selects a maximum value of the correlation values as a correlation value in the district of interest in the first step.

20. (Currently Amended) A recording medium according to claim 17, ~~characterized in that wherein~~ the program further comprises ~~the~~ a third step of calculating the unascertained water amount data from a difference between sewage water amount data representing a time-series change in an amount of sewage water at the base point and non-rainfall sewage water amount data representing a time-series change in an amount of sewage water at the base point ~~in during a~~ non-rainfall weather.

21. (Currently Amended) A recording medium according to claim 15, ~~characterized in that wherein~~ the program further comprises ~~the~~ a fourth step of calculating a pattern matching degree around ~~said each said~~ district by performing interpolation computation using a pattern matching degree in ~~said each said~~ district as interpolation information, and outputting contour information representing the unascertained water occurrence distribution by using the obtained interpolation information.